

MAR08-2008-020566

Abstract for an Invited Paper
for the MAR08 Meeting of
the American Physical Society

Self-Assembly of the HIV Virus

ROBIJN BRUINSMA, University of California, Los Angeles

The talk will discuss the application of the continuum theory of elastic shells to understand the different morphologies of Retroviral capsids. Minor differences in molecular structure between different capsid proteins produce large changes in capsid morphology. Continuum elasticity theory can account for the capsid shape “phase-diagram.” The conical shape of the capsid of the HIV virus is the result of assembly “constraints” in the form of the enclosing lipid bilayer and the osmotic pressure of the encapsidated genome molecules.